

## **REMARKS/ARGUMENTS**

### **Claim Rejections - 35 U.S.C. 103**

In rejecting claims under 35 U.S.C. § 103(a), the Examiner bears the initial burden of establishing a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). *See also In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). It is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d, 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966), viz., (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; and (3) the level of ordinary skill in the art. Additionally, in making a rejection under 35 U.S.C. § 103(a) on the basis of obviousness, the Examiner must provide some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR Int'l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the appellant. *See Oetiker*, 977 F.2d at 1445. *See also Piasecki*, 745 F.2d at 1472. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See Oetiker*, 977 F.2d at 1445; *Piasecki*, 745 F.2d at 1472.

#### **Claims 1-4, 8-9, 11, 17-20, 24-25 and 27**

The Examiner rejects claims 1-4, 8-9, 11, 17-20, 24-25 and 27 under 35 U.S.C. 103(a) as being unpatentable over U.S. 2006/0209785 (“Iovanna”) in view of NetCalc6 Tutorial and a Preview of NetCalc7 (“Nasrallah”). In response, Applicant respectfully traverses the Examiner’s rejection, as there are differences between the claimed invention and the prior art, many of which the Examiner has not appreciated. Also, it is respectfully submitted that there is no valid reasoning in support of the obviousness rejection. Applicant’s reasoning is detailed below.

#### ***Differences between the claimed invention and the prior art***

Claim 1 recites “A method for co-modelling a simulated packet network and a simulated optical network over which the simulated packet network operates, the simulated packet network

representing a plurality of packet links between packet network nodes and the simulated optical network representing a plurality of optical links between optical network nodes”. Therefore, claim 1 clearly relates to co-modelling a simulated packet network and a simulated optical network.

Iovanna has nothing to do with co-modelling a simulated packet network and a simulated optical network. The Examiner appears to appreciate this, as he concedes that “Iovanna does not explicitly disclose: said packet network being a simulated packet network; said optical network being a simulated optical network”.

Notwithstanding this, the Examiner states that ‘simulated networks are well known in the art, as shown by Nasrallah (“network design” on slide 9)’ and concludes that “At the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ simulated version of the networks of Iovanna.” Whilst simulated networks might be well known, co-modelling a simulated packet network and a simulated optical network in the manner claimed by the Applicant is not. One cannot arrive at Applicant’s method simply by simulating the networks of Iovanna, as the Iovanna is missing several features claimed by the Applicant. A discussion of those features is presented below.

Claim 1 further recites “generating a basic packet capacity comprising a capacity value for each packet link based on packet network topology information and packet traffic information”.

The Examiner refers to Iovanna at step 520 of Figure 5, which states “assign weight to link”. This step is described further in paragraph [0067], which states that “At step 515-520 the link is treated at a logical level and assigned a weight or weight function  $w(i,j)$  indicating the cost at of using the link for the transport of the data packet, which cost refers to one or more first critical constraints or required resources.” The Examiner appears to refer to the weight or weight function  $w(i,j)$  as being a “cost parameter”. However, the “cost parameter” Iovanna is not a basic packet capacity. The Examiner appears to appreciate this, as he concedes that “Iovanna does not explicitly disclose ... the cost parameter comprising a basic packet capacity.”

Notwithstanding this, the Examiner states that “this parameter may refer to capacity (Iovanna, paragraphs [0067-0068])” and concludes that “At the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ a cost parameter that comprises a packet capacity.” However, paragraphs [0067] and [0068] are silent to the cost parameter referring to capacity. Moreover, Applicant submits that the person skilled in the art would not think to employ a cost parameter that comprises a packet capacity, as this would be contrary to the teachings in Iovanna. The cost parameter (i.e. weight) in Iovanna is a normalized value as disclosed in paragraph [0087]. The normalized value and the packet capacity are certainly not identical in concept or in value and so it is unclear as to how the normalized value could be replaced with the packet capacity. It is noted that Iovanna provides no teaching as to how such a replacement could be accomplished.

Therefore, Iovanna fails to teach generating a basic packet capacity. From this it follows that Iovanna also fails to teach “generating a basic packet capacity comprising a capacity value for each packet link based on packet network topology information and packet traffic information” as recited in claim 1. Further remarks concerning these limitations follow below.

As for generating a basic packet capacity based on packet network topology information, the Examiner refers to “nodes” in paragraph [0066] and concludes that information about these nodes constitutes “packet network topology information” as claimed. Whilst information about these nodes might constitute “packet network topology information” as the Examiner suggests, Iovanna does not explicitly teach that information about these nodes is used for generating the cost parameter (i.e. weight). Rather, Iovanna merely states that “the network control program is informed that a path must be set up to transfer a data packet, or a plurality of data packets, embedding the information from start node 10 to end node 15, and an analysis of the network links is started at step 510 by considering a first link in the network, connecting node i to node j.” From this it can be seen that the information is embedded from start node 10 to end node 15, but there is no clear teaching as to what the information is used for, and there is certainly no clear teaching for using this information for generating a basic packet capacity. Therefore, Iovanna fails to teach generating a basic packet capacity based on packet network topology information.

As for generating a basic packet capacity based on packet traffic information, the Examiner refers to “data packet” in paragraph [0066] and concludes that information about data packets constitute “packet traffic information” as claimed. Whilst information about data packets might constitute “packet traffic information” as the Examiner suggests, Iovanna does not teach that information about data packets is used for generating the cost parameter (i.e. weight). Rather, Iovanna merely states that “the network control program is informed that a path must be set up to transfer a data packet, or a plurality of data packets, embedding the information from start node 10 to end node 15, and an analysis of the network links is started at step 510 by considering a first link in the network, connecting node i to node j.” From this it can be seen that the information is embedded from start node 10 to end node 15, but there is no clear teaching as to what the information is used for, and there is certainly no clear teaching for using this information for generating a basic packet capacity. Therefore, Iovanna fails to teach generating a basic packet capacity based on packet traffic information.

Claim 1 further recites “generating a basic optical capacity comprising a capacity value for each optical link based on optical network topology information and the basic packet capacity”.

The Examiner refers to paragraph [0069] of Iovanna, which states that “information specifically regarding the physical level is taken into account checking for availability at the physical level of an actual physical link able to meet the requirements of a second critical resource or second constraint, which may be an equivalent, or be influenced by, the first resource or constraint taken into account at the logical level.” The Examiner appears to interpret Iovanna’s “information specifically regarding the physical level” as reading on Applicant’s claimed “basic optical capacity” and states that ‘using this basic optical capacity implies that it is “generated” before it is used.’ To begin, Iovanna’s “information specifically regarding the physical level” is not the same thing as Applicant’s claimed “basic optical capacity”. Iovanna is vague as to what information is considered and it would be completely improper to conclude that it includes basic optical capacity. Furthermore, merely taking the information into account does not mean that the information is “generated” per se. The information might for example be preconfigured information in which case it is not generated.

Therefore, Iovanna fails to teach generating a basic optical capacity. From this it follows that Iovanna also fails to teach “generating a basic optical capacity comprising a capacity value for each optical link based on optical network topology information and the basic packet capacity” as recited in claim 1. Further remarks concerning these limitations follow below.

As for generating a basic optical capacity based on optical network topology information, the Examiner refers to Iovanna’s “information specifically regarding the physical level” and “actual physical link” in paragraph [0069] and concludes that this constitutes “optical network topology information” as claimed. However, Iovanna’s “information specifically regarding the physical level” and “actual physical link” does not necessarily constitute “optical network topology information” as the Examiner contends. Iovanna is vague as to what the “information specifically regarding the physical level” and “actual physical link” entail, and certainly does not indicate that they constitute “optical network topology information”. Moreover, the Examiner appears to refer to Iovanna’s “information specifically regarding the physical level” for both Applicant’s claimed optical network topology information (see page 3 of Office Action) and Applicant’s claimed basic optical capacity (see page 14 of Office Action). In doing so, the Examiner appears to apply two different interpretations of Iovanna’s “information specifically regarding the physical level”. This is clearly improper, as it is impossible for both interpretations to be correct. Therefore, Iovanna fails to teach generating a basic optical capacity based on optical network topology information.

As for generating a basic optical capacity based on the basic packet capacity, it is noted that the Examiner concedes that “Iovanna does not explicitly disclose ... the cost parameter comprising a basic packet capacity.” Moreover, as noted above, the person skilled in the art would not think to employ a cost parameter that comprises a packet capacity, as this would be contrary to the teachings in Iovanna. Seeing as though Iovanna does not teach a basic packet capacity, and Iovanna does not generate a basic optical capacity, Iovanna clearly does not teach generating a basic optical capacity based on the basic packet capacity.

In view of the foregoing, Applicant submits that there are clear differences between the claimed invention and the prior art, many of which the Examiner has not appreciated.

*No valid reason to support obviousness rejection*

The Examiner contends that “it would have been obvious to one of ordinary skill in the art to employ simulated versions of the networks of Iovanna. One of ordinary skill in the art would have been motivated to do this to test the routing strategies and algorithms of Iovanna (paragraph [0028]) before deploying them into actual networks.” Even if this is true, which Applicant does not concede, this does not explain how the person skilled in the art would arrive at Applicant’s invention as claimed. There are clear differences between the claimed invention and the prior art, and the Examiner’s reasoning does not indicate how the person skilled in the art would overcome those differences. Therefore, there is no valid reasoning to support the obviousness rejection.

Even if the Patent Office is able to articulate and support a suggestion to combine the references, it is impermissible to pick and choose elements from the prior art while using the application as a template—see *In re Fine*, 837 F.3d 1071 (Fed. Cir. 1988). It is respectfully submitted that the Examiner’s reference to several portions of Iovanna is an attempt to pick and choose elements while using the application as a template. For instance, as noted above, the Examiner appears to refer to Iovanna’s “information specifically regarding the physical level” for both Applicant’s claimed optical network topology information (see page 3 of Office Action) and Applicant’s claimed basic optical capacity (see page 14 of Office Action), which is clearly improper. Other features have been picked from Iovanna even though they do not expressly read on Applicant’s claimed features—see above arguments.

In view of the foregoing, Applicant submits that claim 1 of the present application cannot be rendered obvious under 35 U.S.C. 103(a).

Applicant submits that claims 2-4, 8-9, 11, 17-20, 24-25 and 27 are patentable over Iovanna and Nasrallah for similar reasons provided above in respect of claim 1.

The Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1-4, 8-9, 11, 17-20, 24-25 and 27 under 35 U.S.C. 103(a). Applicant expressly reserves the right to submit further arguments for any one or more of claims 1-4, 8-9, 11, 17-20, 24-25 and 27 at a later time.

Claims 5-7 and 21-23

The Examiner rejects claims 5-7 and 21-23 under 35 U.S.C. 103(a) as being unpatentable over Iovanna in view of Nasrallah and admitted prior art ("APA"). The Examiner's rejection of claims 5-7 and 21-23 relies on the rejection of claims 2 and 18. Seeing as though the rejection of claims 2 and 18 should be withdrawn, the Examiner is respectfully requested to similarly withdraw the rejection of claims 5-7 and 21-23 under 35 U.S.C. 103(a). Applicant expressly reserves the right to submit further arguments for any one or more of claims 5-7 and 21-23 at a later time.

Claims 10 and 26

The Examiner rejects claims 10 and 26 under 35 U.S.C. 103(a) as being unpatentable over Iovanna in view of Nasrallah and further in view of U.S. 2004/0107382 ("Doverspike"). The Examiner's rejection of claims 10 and 26 relies on the rejection of claims 8 and 24. Seeing as though the rejection of claims 8 and 24 should be withdrawn, the Examiner is respectfully requested to similarly withdraw the rejection of claims 10 and 26 under 35 U.S.C. 103(a). Applicant expressly reserves the right to submit further arguments for any one or more of claims 10 and 26 at a later time.

Claims 12-16 and 28-32

The Examiner rejects claims 12-16 and 28-32 under 35 U.S.C. 103(a) as being unpatentable over Iovanna in view of Nasrallah and Doverspike and further in view of On IP-over-WDM Integration ("Ghani"). In response, Applicant respectfully traverses the Examiner's rejection for reasons detailed below.

The Examiner's rejection of claims 12, 13, 28 and 29 relies on the rejection of claims 8 and 24. Seeing as though the rejection of claims 8 and 24 should be withdrawn, the Examiner is respectfully requested to similarly withdraw the rejection of claims 12, 13, 28 and 29 under 35 U.S.C. 103(a).

As for claim 14, the Examiner concedes that "Iovanna in view of Nasrallah, Doverspike, and Ghani does not expressly disclose: the method comprising the steps of: (1) establishing at

least one back-up packet traffic flow tunnel for each packet link in the simulated packet network; (2) performing a series of steps, as follows, for each optical link in the simulated optical network; A. taking an optical link out of service; B. performing a series of steps, as follows, in a nested process for each packet link affected by the optical failure; i. switching all packet traffic flow on the affected packet link to an at least one back-up packet traffic flow tunnel; ii. incrementing capacity of each packet link traversed by the at least one back-up packet traffic flow tunnel; and iii. incrementing capacity of each optical link traversed by an optical connection supporting the packet link; and C. restoring initial capacity values; and (3) summing packet link capacity requirements and optical link capacity requirements.”

With respect, the rejection of claim 14 is clearly improper. “The gap between the prior art and the claimed invention may not be ‘so great’ as to render the [claim] non-obvious to one reasonably skilled in the art.” *Dann v. Johnston*, 425 U.S. 219, 230, 189 USPQ 257, 261 (1976). Seeing as though the combination of four documents fail to disclose several limitations of claim 14, the gap between the prior art and the claimed invention is clearly so great that the claim is rendered non-obvious to one reasonably skilled in the art. It is respectfully submitted that there are too many features missing from the prior art for claim 14 to be obvious.

Furthermore, Applicant notes that even if the Patent Office is able to articulate and support a suggestion to combine the references, it is impermissible to pick and choose elements from the prior art while using the application as a template—see *In re Fine*, 837 F.3d 1071 (Fed. Cir. 1988). It is respectfully submitted that combining Iovanna, Nasrallah, Doverspike, and Ghani is an attempt to arrive at claim 14 while using the present application as a template. This attempt is flawed because the Examiner’s proposed combination does not account for the fact that the prior art has little or nothing to do with claim 14 and fails to disclose several limitations as even conceded by the Examiner.

In view of the foregoing, Applicant submits that claim 14 of the present application cannot be rendered obvious under 35 U.S.C. 103(a).

Applicant submits that claims 15, 16 and 30-32 are patentable over Iovanna and Nasrallah for similar reasons provided above in respect of claim 14.

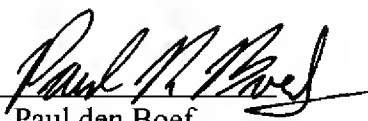


The Examiner is respectfully requested to reconsider and withdraw the rejection of claims 12-16 and 28-32 under 35 U.S.C. 103(a). Applicant expressly reserves the right to submit further arguments for any one or more of claims 12-16 and 28-32 at a later time.

Favorable consideration is requested.

Respectfully submitted,

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